

SP-E2 Perform Modeling Simulations

October 25, 2002

1.0 Introduction/Background

The Federal Energy Regulatory Commission (FERC) relicensing process requires a great deal of analysis both operational and environmental. Much of this analysis is based on “what if” questions such as What if we kept Oroville Reservoir Elevation higher until Labor Day? Or “What if build another powerplant at Hyatt? The answers to these and many other similar questions cannot be found from analysis of existing data since the situations covered by the questions have never happened.

Computer simulation models can produce estimates of the system response to changes in operations and or facilities that would results if the questions were actually implemented. These estimated operations can then be used to perform impact analysis to evaluate the operational, economic, or environmental impacts of the issue being addressed for the FERC relicensing process.

2.0 Study Objective

The objective of this study is to perform specific operations-related computer simulation studies to evaluate reservoir water levels, downstream flows, temperatures, and power/energy generation effects as requested by Work Groups as part of their Study Plans.

3.0 Relationship to Relicensing /Need for the Study

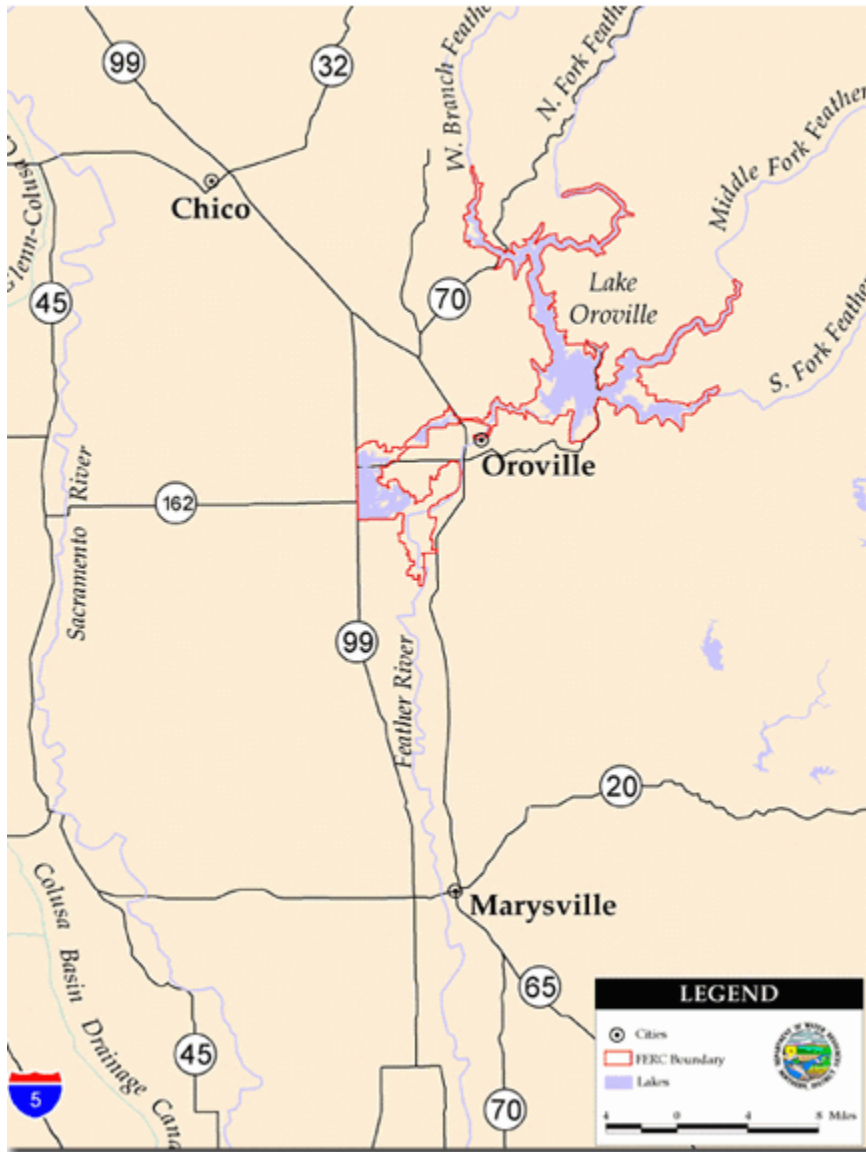
Computer simulations will be an integral part of many studies and analyses for the relicensing process. Specific operation simulations will be a major factor in other Work Groups’ Study Plans addressing the myriad of stakeholder concerns and questions.

Computer simulations performed for the relicensing process are only done to provide information to aid in the analysis being performed under another study plan. Since any simulations performed are directly linked to other study plans there needs to be a high degree of coordination to ensure the simulations are performed, and the results are used appropriately for the purpose of the requesting study. The full set of simulations that may be required for any other study.

4.0 Study Area

The study area for statewide simulation modeling includes the major facilities of the USBR Central Valley Project (CVP) and the DWR State Water Project (SWP). These include the Trinity, Sacramento, and San Joaquin river basins as well as the Sacramento – San Joaquin Delta and the Delta Mendota Canal (CVP) and California Aqueduct canal systems. (Include map and schematic for CALSIM II.)

The study area for local operations modeling and Feather River temperature modeling includes the Feather River basin from the upstream boundary of Lake Oroville downstream to its confluence with the Sacramento River. Geographic scope may be refined as additional information is developed and needs are identified through collaboration with other Work Groups. The major work is expected to focus on the Oroville – Thermalito Complex and the Feather River downstream to the confluence with the Yuba River.



5.0 General Approach

All modeling requests will be coordinated through the RAM's of the various work groups. When output from modeling is required for analysis under a study plan the person executing the study plan will first meet with the modelers to develop a study request that meets the needs of the study and is feasible to be performed. The request will then be submitted to the appropriate RAM for coordination with other modeling requests. When approved by the Plenary Group the request will be sent to the modelers to be fulfilled. This process will get the modelers involved in the process at an early stage to ensure that modeling requests are developed as appropriate to meet the requirements of the study as well as assist in the overall control and coordination of the analysis process.

Detailed Methodology and Analysis Procedures

Task 1—Assist Study Plan Leaders in Developing Appropriate Modeling Request to Meet the Requirements of the Study

This is an opportunity for the study plan leader to meet with the modelers to discuss what is needed, what can be produced, and how to best do the modeling to meet the needs of the study plan. This will help in assuring that the appropriate modeling is performed and the results are used appropriately. This should be done as the study plans are formulated or modified.

Task 2—Develop Appropriate Assumptions for the Simulation

This will have been discussed at the modeling request development meeting in general terms. This task is the development of any detailed assumptions required or new assumptions as a result of changes due to coordination with other model simulation requests. The resulting detailed assumptions will be coordinated with the requesting study plan leader.

Task 3—Determine models and model interaction required to meet the request

Different modeling request may require different models or model interactions to accomplish. For example many requests may not require that the Statewide Operations modeling be redone, existing Statewide Operations simulations may be appropriate for use to meet the request. Under this task the modelers will determine what model simulations are required and how they will be performed to meet the modeling request. The resulting proposed modeling procedure will be coordinated with the requesting study plan leader.

Task 4—Develop Specialized Analysis Procedures as Required

Some modeling requests may require specialized analysis that was not foreseen when the modeling scheme and models were originally developed. In those cases the modelers will develop new procedures, tools, or model modifications required to satisfy the request. Any new procedure or tool development will be coordinated with the requesting study plan leader.

Task 5—Run Models as Required

This includes running the models, evaluating the results, iterations between models as required.

Task 6—Prepare Outputs

Prepare the standardized and any specialized outputs for transmittal to the study plan leader.

6.0 Results and Products/Deliverables

Results

The results of each requested simulation will be the simulated stage, flows and temperatures throughout the system under the operational alternative specified in the specific request. These results can then be used directly for impact analysis purposes or in additional modeling or technical analysis.

Products/Deliverables

Products from this study will be the standardized and any specialized outputs from performing the requested simulations.

7.0 Coordination and Implementation Strategy

Coordination with Other Resource Areas/Studies

All simulations require very detailed coordination with the requesting study plan leader as spelled out in this study plan. The RAMs will be responsible to coordinate the different simulation requests from the different resource areas and/or study plan leaders.

Study Plan Tracking/Regulatory Compliance Requirements

This section to be developed.

8.0 Study Schedule

This section to be developed.